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# NuMI/MINOS

## Progress and Status

Peter Lucas

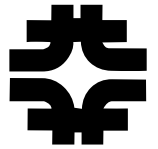
Fermilab

March 30, 2005

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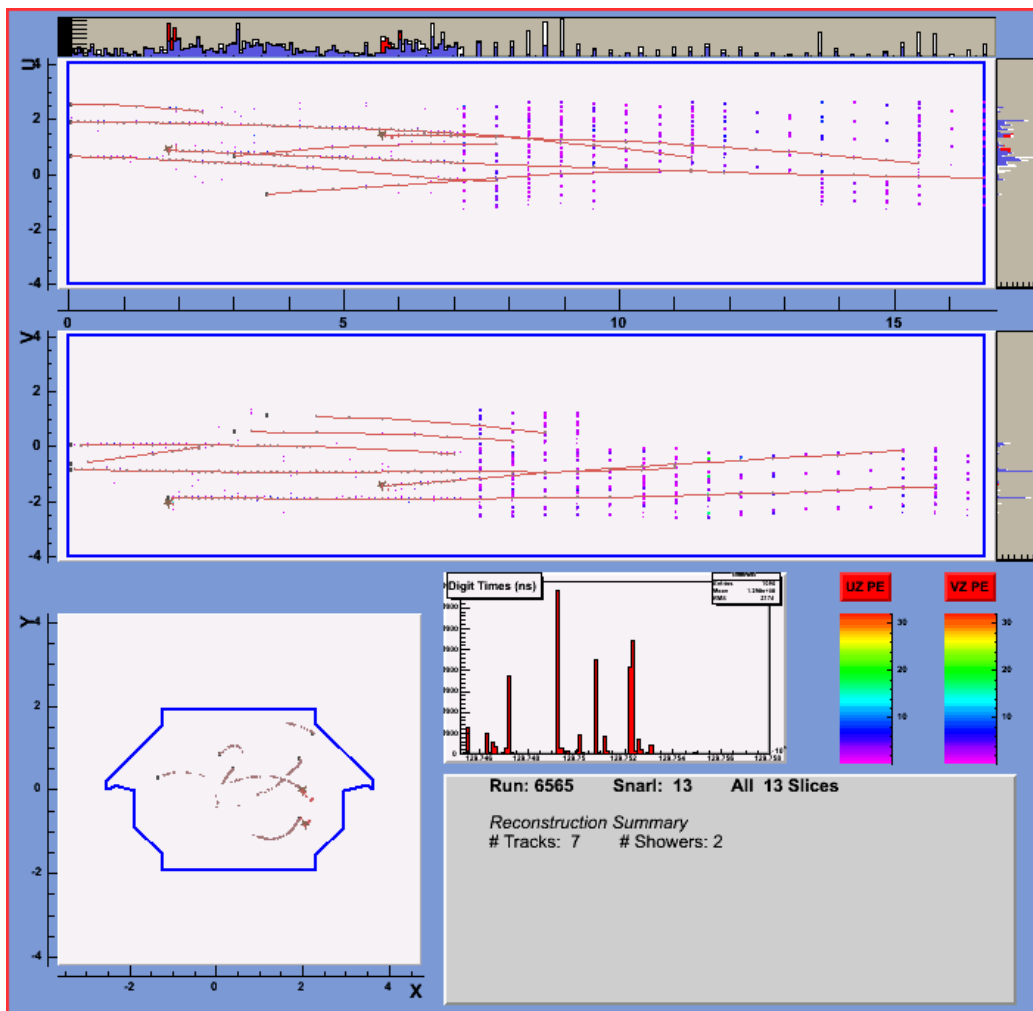
# Status

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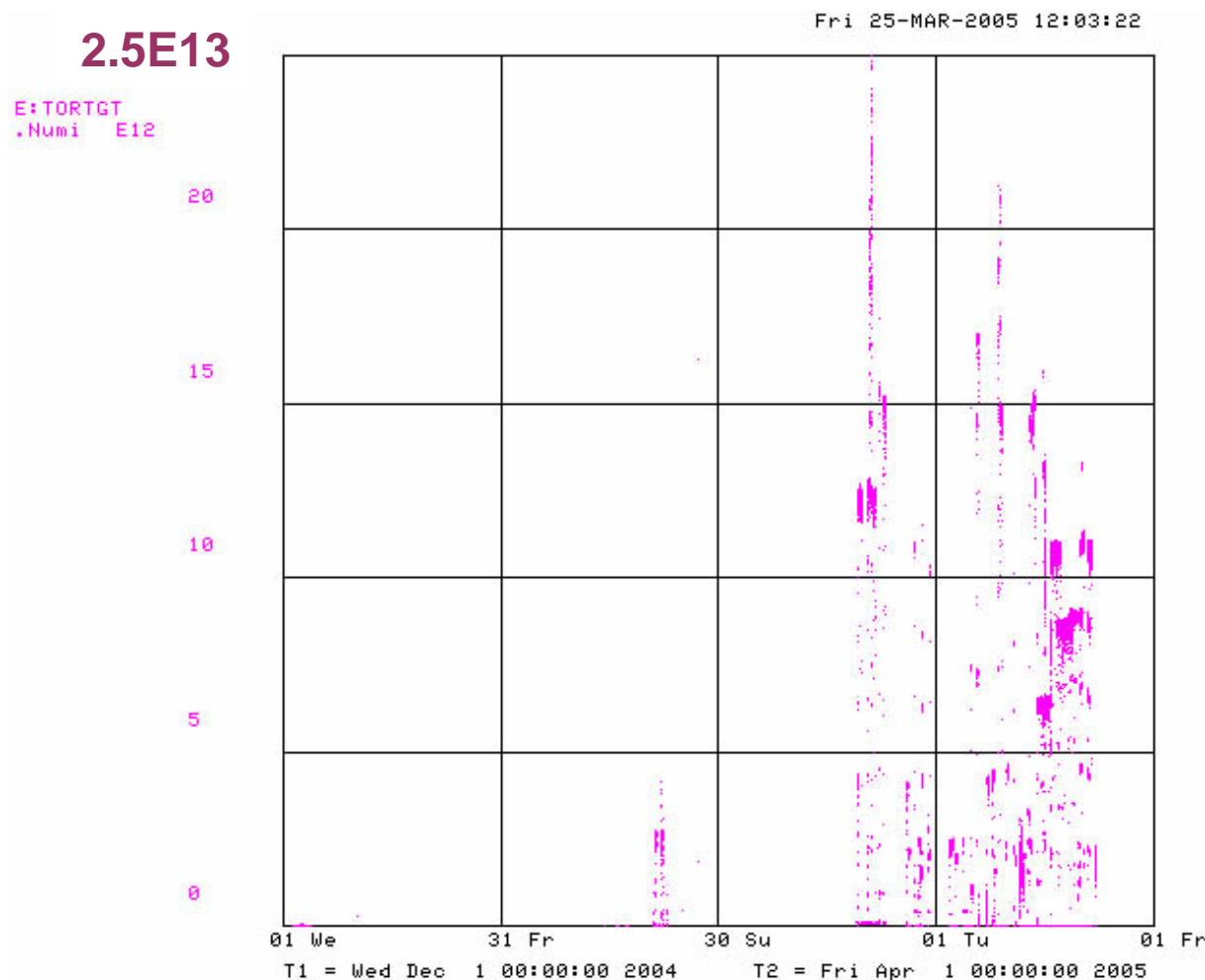


- Construction project complete
  - Required for CD4 was observation of beam induced events in near detector
  - Achieved in February 2005
- Real data taking has begun
  - ~10,000 events in near detector
  - A few events in far detector
- Rates and intensities ramping up

# One Spill of Near Detector Data

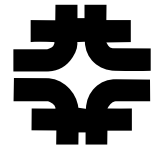


# Four Months of NuMI Intensity



# Pulse Rate

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- Started with ~25 pulses in a day
  - Took one only when really ready to use it
- Typical was one per minute at the start
- Recently is one per pbar stacking cycle
  - One per 2 seconds to 5 seconds
- Goal is one per 2 sec
  - Antiproton will have to speed up

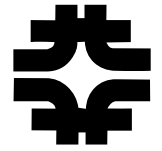
# Losses



- Detectors
  - 55 Tevatron style sealed units
  - 4 continuous “total loss monitors”
  - 1 ESH Department “scarecrow”
- Profile monitors present very little material, but still generate measurable losses
- Small amount of slip-stacking leftover beam comes down our line
- Original harsh groundwater limits somewhat relaxed
  - Water flows into tunnel before it can become activated

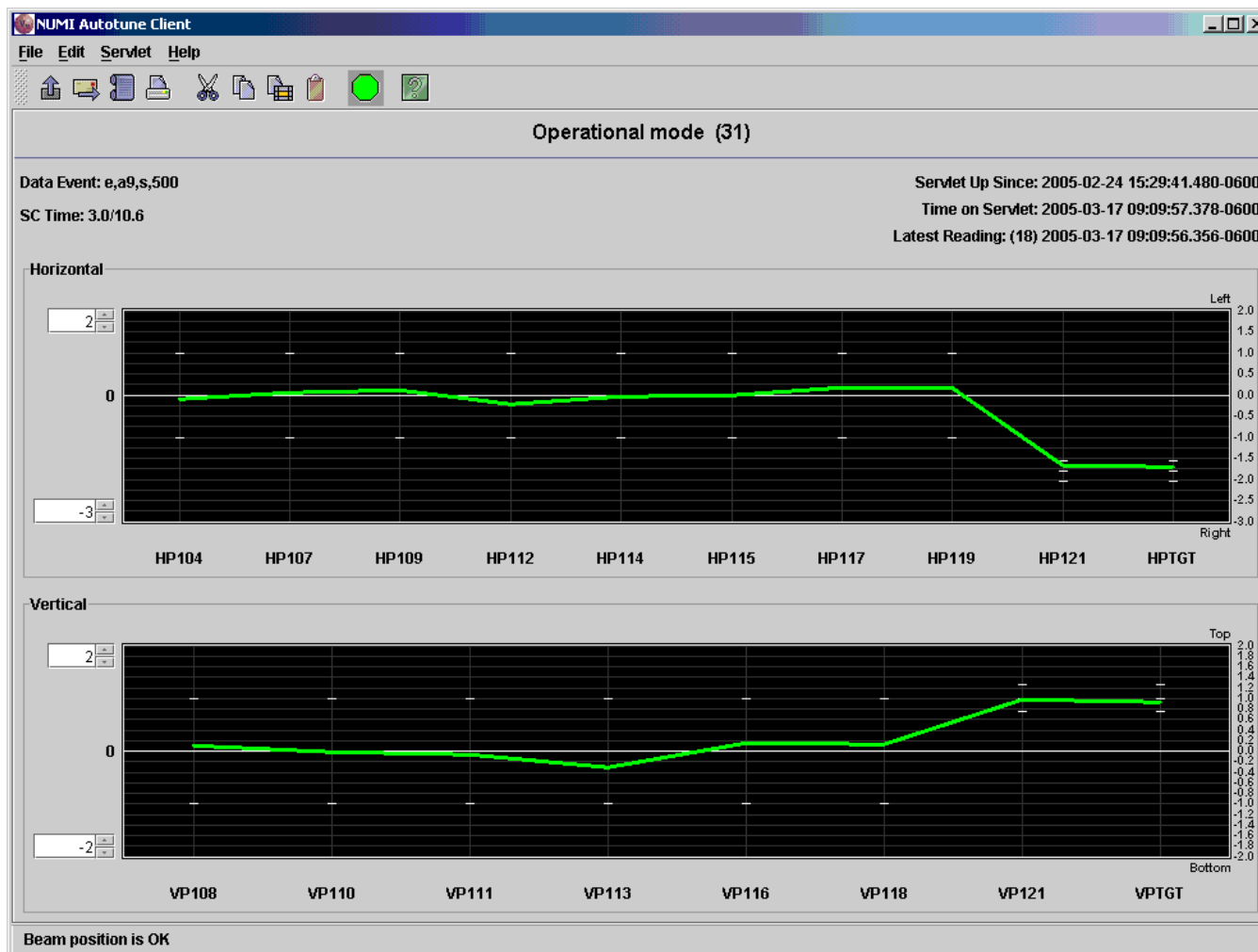
# Beam Permit System

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- Different rates of fault checking
  - DC, such as loss monitor HV
  - Just before pulse, power supply currents
  - Just after pulse, to veto the next one, losses
- Provides an automated check list for startup
- Has correctly tripped on losses ~20 times
  - No known failures
- Were occasional false positives on power supplies
  - Fixed

# Autotune





# Summary

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- Construction project complete
- Beamline and detector commissioning have gone well
- Very little remains before can be declared an operational experiment